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Search for the optimal method of making reticular neck telescopic implants

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Abstract

© Published under licence by IOP Publishing Ltd. The production of individual implants, intended for a specific clinical case, is increasingly used in medicine. The next stage in the development of implants is the creation of a non-monolithic mesh structure of the implant body. This allows to reduce its weight without loss of mechanical characteristics, and the main thing is to fill the free intergrid space with bioresorbable material, which will be replaced by cells in the future. The creation of a reticular three-dimensional structure of the implant is a complex technical task and requires the search for new ways of production. In this paper, a comparative study of the possibilities of selective laser melting and casting on burned-out models of telescopic implants obtained by 3D printing methods is carried out. Various production methods produced prototypes of telescopic cervical implants and carried out their technical and economic analysis. It is established that the best quality of products is observed by Selective Laser Melting technology.

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